

What is claimed is:

1. A lead assembly comprising:
 - a lead body extending from a distal end to a proximal end;
 - 5 a conductor disposed within the lead body;
 - a piston movably disposed within the lead body; and
 - a fixation helix supported by the piston at a first portion of the fixation helix,the first portion of the fixation helix forming a drive mechanism that advances the fixation helix.
- 10 2. The lead assembly as recited in claim 1, wherein the first portion of the fixation helix is coupled with the piston.
3. The lead assembly as recited in claim 1, wherein the piston has a
15 recess, and at least a portion of the first portion of the fixation helix is disposed within the recess.
4. The lead assembly as recited in claim 3, wherein the recess has a
helical shape.
- 20 5. The lead assembly as recited in claim 3, wherein the recess has a first width and the first width is less than a diameter of the first portion of the fixation helix.
- 25 6. The lead assembly as recited in claim 3, wherein approximately 1/3 to 1/2 of a diameter of the fixation helix is disposed within the recess.
7. The lead assembly as recited in claim 1, further comprising a housing
portion disposed near the distal end of the lead body, and a guide is disposed on an
30 inner surface of the housing portion, and the guide guides the drive mechanism.

8. A lead assembly comprising:
a lead body extending from a distal end to a proximal end;
a housing disposed near the distal end of the lead body;
a conductor disposed within the lead body;
5 a piston movably disposed within the housing;
a fixation helix coupled with the piston along a first longitudinal portion of
the fixation helix, the first portion of the fixation helix forming a drive mechanism
that advances the fixation helix; and
a guide disposed within an inner surface of the housing.
- 10 9. The lead assembly as recited in claim 8, wherein the guide is a
helical guide.
- 15 10. The lead assembly as recited in claim 8, wherein the helical guide is
a segmented helical guide.
11. The lead assembly as recited in claim 8, wherein the fixation helix is
coupled with the piston along a recess within the piston.
- 20 12. The lead assembly as recited in claim 8, wherein the fixation helix
has an inner diameter and the piston has an outer diameter, and the outer diameter is
greater than the inner diameter prior to coupling the fixation helix with the piston.
- 25 13. The lead assembly as recited in claim 8, wherein the fixation helix is
coupled with the piston along a helical recess within the piston.
14. The lead assembly as recited in claim 8, wherein the fixation helix is
electrically coupled with the conductor.

15. A lead assembly comprising:
a conductor;
a piston electrically coupled with the conductor; and
an active fixation helix supported by the piston at a first portion of the
5 fixation helix, the first portion of the fixation helix forming a drive mechanism that
longitudinally advances and retracts the fixation helix.
16. The lead assembly as recited in claim 15, wherein the active fixation helix is
electrically coupled with the piston.
- 10 17. The lead assembly as recited in claim 15, wherein the active fixation helix is
recessed within a portion of the piston.
18. The lead assembly as recited in claim 15, wherein the active fixation helix is
15 mechanically coupled with the piston.
19. A method comprising:
providing a lead assembly including:
a lead body extending from a distal end to a proximal end;
20 a conductor disposed within the lead body;
a piston movably disposed within the lead body;
a fixation helix supported by the piston at a first portion of the
fixation helix, the first portion of the fixation helix forming a drive
mechanism;
25 rotating the fixation helix; and
longitudinally driving the fixation helix with the drive mechanism.
20. The method as recited in claim 19, further comprising recessing at least a
part of the first portion of the fixation helix within the piston.

21. The method as recited in claim 19, further comprising recessing approximately $\frac{1}{3}$ to $\frac{1}{2}$ of a diameter of the fixation helix within the piston.
22. The method as recited in claim 19, further comprising recessing at least a
5 part of the first portion of the fixation helix within a helical groove of the piston.
23. The method as recited in claim 19, further comprising coupling the first portion of the fixation helix with the piston.